



Propulsion Pathfinder (PPF)

A CubeSat Propulsion System Technology Demonstrator in Low Earth Orbit

NASA's Propulsion PathFinder (PPF) project will flight test a variety of CubeSat propulsion systems in a relevant space environment, thereby elevating the Technology Readiness Level (TRL), or technology maturity level, of these subsystems to TRL 7.

A series of flights are planned in low Earth orbit to characterize the performance of each propulsion system and demonstrate the capability to perform orbital maneuvers.

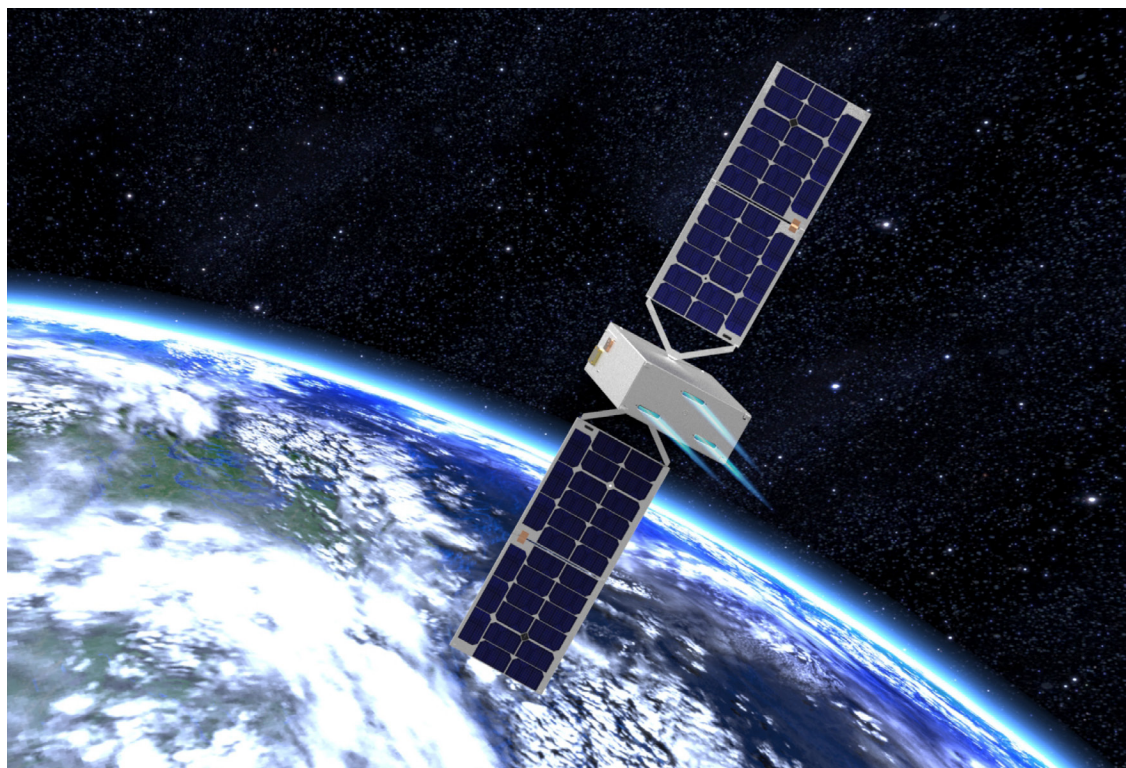
Each PPF mission consists of a 6-Unit (6U) CubeSat weighing approximately 12 kilograms (25 pounds) and measuring 30 centimeters x 25 centimeters x 10 centimeters. Each spacecraft will also be equipped with deployable solar arrays

that provide an on orbit average of 44 Watts of power.

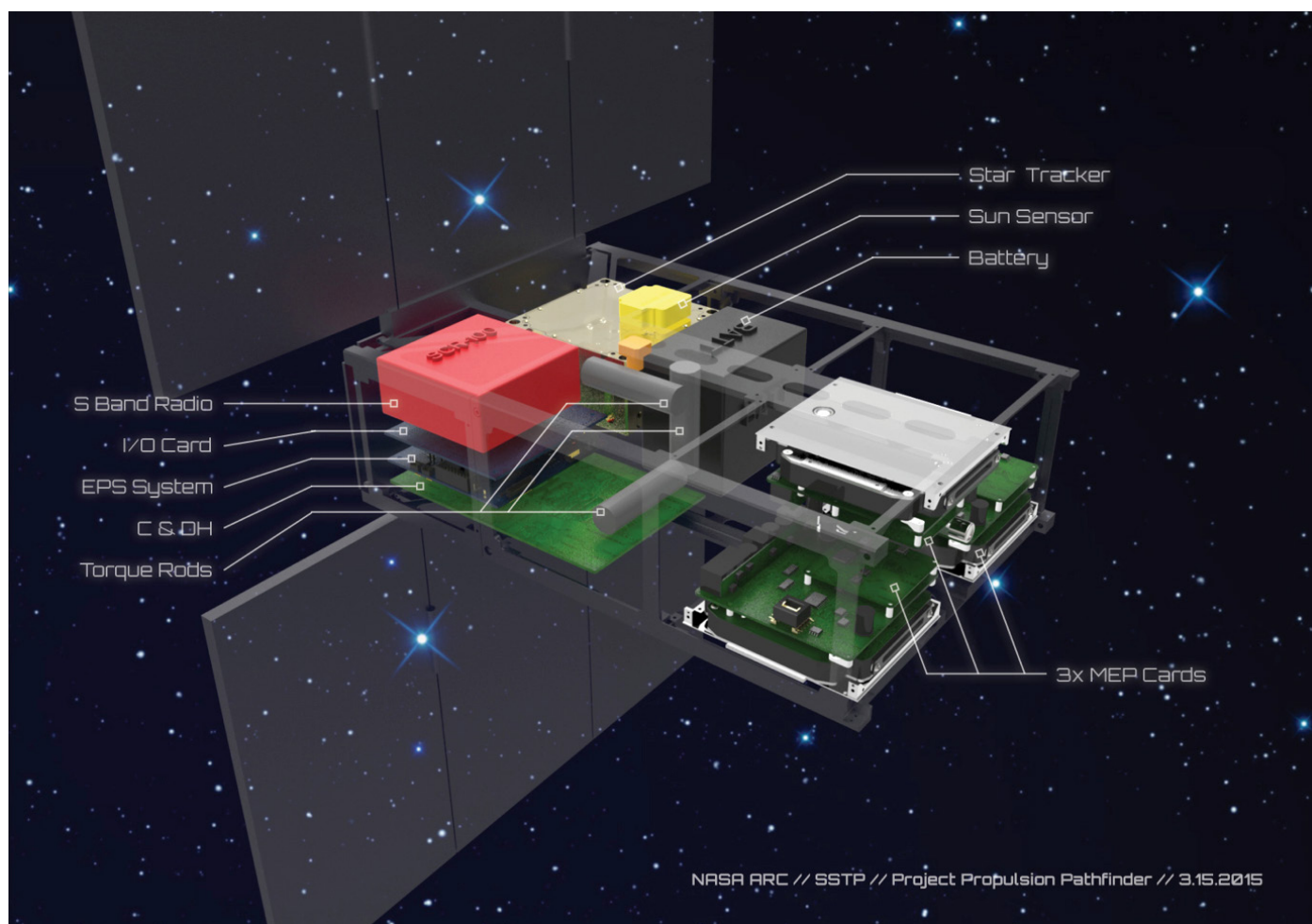
The PPF project will benefit future missions by providing the capability to maneuver small science platforms; stabilize spacecraft for excess momentum removal (reaction wheel desaturation), and travel to deep space. As small spacecraft become mobile, NASA benefits by having access to low-cost science and technology platforms that utilize a variety of propulsion systems for near and deep space flight.

The PPF project is led by NASA Ames Research Center at Moffett Field, California and is a collaborative effort with Glenn Research Center. The project is funded by the Small Spacecraft

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Concept of a PPF 6U with Three Microfluidic Electrospray Engines.



Internal Diagram of a Concept PPF 6U with Three Microfluidic Electro spray Engines.

Technology Program (SSTP), one of nine programs within NASA's Space Technology Mission Directorate. The SSTP is chartered to develop and mature technologies to enhance and expand the capabilities of small spacecraft with a particular focus on communications, propulsion, pointing, power, and autonomous operations.

For more information about the SSTP, visit:

<http://www.nasa.gov/smallsats/>

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